

REMARKS

I. Application Status

Claims 1-49 are pending; claims 18-21, 33-39, and 41-49 are withdrawn from consideration due to a restriction requirement. Claims 22-32 and 40 are allowed. Claims 9-11 and 13-17 would be allowable if rewritten to overcome rejections under 37 U.S.C. § 112, second paragraph. Claims 1-8 and 12 are rejected under 35 U.S.C. § 112, second paragraph, and under 35 U.S.C. § 102(b) as anticipated by Inaba et al.

With this response, claims 7, 18-21, 33-39, and 41-49 are canceled, claims 1, 6, 8, 12, 24, 29, and 30 are amended, and claims 50-53 are newly added. No new matter is added. Reconsideration of the claims, in view of the remarks that follow, is respectfully requested.

II. Examiner Interview

A telephone interview was conducted on Wednesday, June 30, 2004, between Examiner Rose and the undersigned attorney. The distinctions of the claimed invention over Inaba et al. were discussed, as is explained in greater detail below. Examiner Rose indicated that the pending claims were distinguished over the Inaba reference.

III. Indefiniteness Rejection

Claims 1-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. In claim 1, line 6, the use of the term “and/or” is considered indefinite.

Claim 1 is amended to recite that the pad conditioning parameters are “selected from the group including rotation speed and rotation direction of a conditioning disk” and makes clear that the pad conditioning parameter is either rotation speed of the conditioning disk, or rotation

direction of a conditioning disk, or both. The rejection may now be withdrawn.

IV. Rejection over Inaba, et al.

Claims 1-8 and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Inaba et al. Applicants respectfully disagree.

The claims at issue relate to a method for conditioning the polishing pad life in a chemical mechanical polishing (CMP) process. The method, per independent claim 1, includes “providing a pad wear and conditioning model that defines wafer material removal rate as a function of at least one *pad conditioning parameter* selected from the group including *rotation speed and rotation direction of a conditioning disk*.” Wafer material removal rates obtained during wafer polishing the pad wear and conditioning model are used to “calculate updated pad conditioning parameters.” One non-limiting advantage of the method is that the lifetime of the polishing pad is extended without deterioration of the polishing capability of the polishing pad.

Inaba et al. fails to teach or suggest the claimed invention. According to Inaba et al., a wafer polishing model is identified that correlates polishing pressure with wafer material removal; and actual wafer removal is measured and compared to the target wafer removal. This information is used to determine whether to (1) continue polishing wafers using the same polishing pad, (2) interrupt the polishing process to condition the polishing pad, or (3) interrupt the polishing process to replace the polishing pad. See, column 8, lines 18-46, with reference to Figure 4.

Thus, Inaba et al. do not provide a pad wear and conditioning model, as recited in claim 1. In particular, there is certainly no description in Inaba et al. of a pad wear and conditioning

model that includes either the rotation speed or the rotation direction of the conditioning disk as a parameter of the model.

For the foregoing reasons, it is submitted that claim 1 (and claims 2-8 and 12 depending therefrom) are patentable over Inaba et al. It is respectfully requested that the rejection be withdrawn.

V. Newly Added Claims

Claims 50-53 are newly added. Since claims 51-53 depend from claim 1, then for at least the reasons set forth in Section IV, it is submitted that claims 51-53 are patentable over the prior art. As regards to claim 50, Inaba et al. do not teach or suggest a “pad wear and conditioning model that defines wafer material removal rate as a function of at least one pad conditioning parameter and that identifies a maximum and minimum value for each of the at least one pad conditioning parameter and the wafer removal rate.” Nor does Inaba et al. teach or suggest “calculating updated pad conditioning parameters based upon the wafer material removal rate” the pad wear and conditioning model.

For the foregoing reasons, it is submitted that claims 50-53 are patentable.

VI. Conclusion

For the foregoing reasons, it is submitted that the claims are in condition for allowance. A favorable Notice to that effect is respectfully requested.

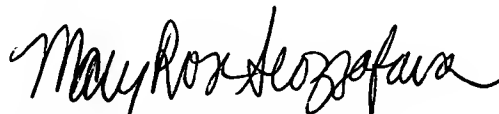
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees should any be required for this submission, or credit any overpayment to deposit account no. 08-0219.

In the event that an Extension of Time is required, the Commissioner is requested to grant

a petition for that Extension of Time which is required to make this response timely and is hereby authorized to charge any fee for such an Extension of Time or credit any overpayment for an Extension of Time to Deposit Account No. 08-0219.

Respectfully submitted,



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